5. Discussion

5.1 Overview of the findings

This study has generated several findings that are important both for practicing managers and for theory development. First, the study has revealed that there is no consistent terminology used to describe service lines and that simply questioning whether a facility or a VISN has service lines does not provide reliable information. All 22 VISNs have service lines but they vary widely in structure, clinical focus, and relationship to the VISNs' overall strategies. VA facilities also have implemented service lines extensively, with over 75% of all VA facilities having mental health and/or primary care service lines.

By providing a theory-based method for classifying service lines we have been able to distinguish among different service line forms and to determine that they have differing relationships to achievement of organizational goals. This approach has provided much richer findings than simply comparing sites with service lines to sites without them.

5.2 VISN-level findings

We have reported that the number of service lines at the VISN level is slowly growing. Among the networks, our findings have led us to begin to differentiate what appear to be four different patterns of service line adoption. In a few networks, such as VISN 2, VISN-level service lines are being used as the primary integrative device for the network and to drive VISN-wide reorganization. In a second group of networks, such as VISN 7, service line teams/councils are used to develop network-wide clinical policy and share best practices. In others, such as VISN 3, service lines are utilized as a mechanism for addressing only some specific clinical areas requiring network-wide management, coordination and sharing best practices across facilities. Finally, a fourth group of networks, such as VISN 20, implemented either service line task forces with limited charges or have not implemented service lines at all, but have instead utilized other integrative devices, such as the creation of regional sub-systems.

At the VISN level we found that the most positive perceptions of service lines were reported by managers in VISNs with the most extensively developed service line structures. This may reflect the impacts of different service line structures. Alternatively, it is possible that managers in VISNs with the most extensively developed service lines are more committed to the service line concept. As a result they perceive service lines more positively than managers with a lesser commitment to the concept. In fact, we are aware of some situations where managers who were not committed to the service line concept found positions in VISNs that were not extensively implementing service lines. Those managers remaining in the VISNs with extensive development of service lines were the people most committed to the concept.

Another possible explanation of the pattern of findings between VISN service line structures and perceived benefits is related to the change process. Interview data revealed that in some VISNs facility directors and chiefs of staff resisted the implementation of service lines. In situations where there was substantial resistance to service lines, it may not have been possible to implement team, matrix or divisional forms because they require that the facility leadership in VISNs give up some control to service line directors. Thus, while it is possible that the low level of perceived benefits of task forces reflects the limited integrative capacity of a task force, it may also reflect a strong resistance to change and the inability of a VISN to implement any more integrative service line form. This suggests a caution in interpreting the findings regarding task force structures.

5.3 Facility-level findings

We have reported higher proportion of the most integrative service line structures at the facility level than at the VISN level. We have also reported that mental health and primary care are the two most common areas for service line adoption.

We found that facility-level service lines have had little positive effect on important facility-level outcomes. We found a limited number of statistically significant relationships between service line structures and outcomes related to VA performance measures. Most significant findings did relate to both service line form and duration rather than to the simple existence or non-existence of service lines. Many of these findings indicated a negative relationship between outcomes and those service lines having a mixed form (i.e., those in which staff evaluations were conducted in highly inconsistent ways among the various disciplines). The second set of negative associations involves short-duration service lines. Only long-duration task forces, teams and divisions had statistically significant positive associations and no statistically significant negative associations with any outcome measures.

In reviewing the findings, we first note that there is no theoretical literature that discusses the mixed-evaluation service lines. We, in this study, are the first to report their existence. We have no direct evidence as to why they are negatively associated with outcomes, but believe that the inconsistency in evaluation processes may reflect one of three situations. First, it may result from resistance to change, where one or more service chiefs have resisted giving up personnel control, while other service chiefs have cooperated in the change. Second, it may reflect that the implementation of the service line is still in process, with shifts in reporting relationships evolving over time. Third, it may reflect medical center management's lack of understanding of the service line concept and permitting the substantial variations among disciplines. All of these possible causes would contribute to ambiguity about service lines among staff. The fact that the greatest number of statistically significant negative associations involved longer-duration mixed service lines may indicate that lasting ambiguity has a detrimental effect on organizational performance. The mixed evaluation processes may also convey a lack of commitment to the service line concept, leaving staff without clear direction as to what behavior is desired, and thus contributing to reduced performance. While we do not yet know the mechanisms by which the mixed service line structures may be associated with lowered performance on key measures in VA, we do note their strong negative relationship and caution against their use.

After accounting for the mixed-evaluation service lines, the remaining statistically significant negative associations between outcomes and service line form and duration occur with shorter-duration service lines. We believe that these results reflect the turbulence of the change process. Although we thought that we had accounted for such turbulence by categorizing service lines of less than seven months duration together with the non-service line sites, the period of negative effects of the change process appear to last longer. This may reflect the time needed for implementation before positive effects of service lines begin to accrue. The negative effects associated with transition to service lines may be underestimated in the literature, and the findings of this study raise caution to VA managers. We also have found few statistically significant positive associations between longer-duration service lines and VA performance measures. We suggest that VA managers carefully consider whether the long-term benefits of service lines will outweigh the apparent short-term negative impacts.

Confusion about whether effects were related to service lines or to the implementation process was manifested by many of our interviewees. Responses to questions about service line effects often included more general comments about the difficulties of the change process. This also reflected the fact that VHA facilities were simultaneously undergoing multiple change processes. As noted above, we have seen strong negative associations between short-duration service lines and outcomes, consistent with the turbulence of the change process. Similar to what we discussed at the VISN level, in some facilities service chiefs and other managers strongly resisted service line implementation and in some cases were able to sabotage the change process. In situations where there was substantial resistance to service lines, it may not have been possible to implement team, matrix or divisional forms because they require that the service chiefs in facilities give up some control to service line managers. Thus, as in interpretation of the VISN-level findings, the relationships between task forces and outcomes may not reflect causality involving the structure of the service line but rather a strong resistance to change.

Through site visits we have also learned that there are substantial other barriers to implementation of service lines. These include the VA personnel system, that does not facilitate classification of service line managers at grade levels that attract highly qualified personnel; a lack of skills and training in general management and financial management for service line managers; and a lack of cost accounting information needed to provide budget responsibility and authority to service lines.

5.4 Discussion of overall findings

Overall, the study has revealed a more positive impact of service lines in VISNs than in facilities. This may reflect several different factors. First, these findings concern service lines at two different levels of analysis. Thus, it is possible that VISN-level service lines are having a positive effect at the same time that facility-level ones are not, because the relevant goals and outcomes, as well as the contextual factors such as physical proximity of individuals, may differ. Second, the methods of analysis of the VISN-level and facility-level service lines differed. We had facility-level quantitative outcomes, but we did not have VISN-level quantitative outcome data and we relied exclusively on qualitative data. Third, time lags between service line implementation and potential effects on objective outcomes may also be an issue.

In comparing VA service lines to those in the private sector, we note that they differ in both scope and clinical focus. The most common private-sector service lines at both the facility and network levels are in cardiology, oncology, and women's health, followed in prevalence by mental health and geriatrics/long-term care. In many cases in the private sector, the primary purpose of these service lines is to market services. Both the private sector and VA are driven by environmental factors; yet those environments are still quite different and thus the pressures are different. For example, third party payers are often cited as driving influences behind the creation of disease-specific service lines in the private sector. There are very few private-sector primary care service lines, a reflection of the relative independence of physician office practices in the private sector. The broad scope of VA service lines in areas such as primary care and acute care may inhibit their effectiveness. One of the underlying reasons postulated for service line effectiveness is the focus they provide on a limited area of an organization's outputs. This theoretical advantage is difficult to reconcile with broadly defined service lines.

In our site visits some interviewees believed that service lines conflicted with their medical centers' academic missions. Other respondents, however, believed that the interdisciplinary nature of service lines contributed to their research productivity. Although we do not have any direct evidence on the relationship between service lines and academic productivity or outcomes, we have observed the conflict between the service line structure and the medical school organization. Some respondents questioned whether the service lines were not just new silos that would fragment care. Having both primary care and specialty care service lines divides physicians in the medical school's department of medicine. This problem is not unique to VA, however. In academic health centers in the private sector, service lines in areas such as cardiovascular diseases and cancer care involve physicians from different specialties, and thus different medical school departments. While some service lines bring together physicians from different specialties, some also fragment departments such as medicine and surgery. Creating narrow, disease focused service lines results in fragmentation within the departments of medicine and surgery to an even greater degree than the broadly defined service lines implemented in VA.

The majority of VA service line managers are physicians, while in the private sector most service line managers are non-physicians. We believe this reflects the fact that physicians are employed by VA, but few physicians are employed by private-sector health care organizations. This provides VA an advantage over the private sector since a major challenge faced by service line managers is getting physicians involved in their operations. However, this also brings challenges to VA, as many VA service line managers are not well prepared to manage the financial aspects of service lines or the multiple disciplines involved.

5.5 Limitations of this evaluation

Although this study has several important findings, it also has several limitations. First, at the VISN level, service lines that have developed beyond the point of task forces are still quite new and thus have had very little time to generate any measurable effects. The development of service lines at the VISN level simply did not progress as rapidly as we had anticipated they would at the beginning of the study.

Second, at both the VISN and facility levels, service line implementation has occurred in the context of multiple changes, which may confound any potential effects. For example, the overall trend toward improvement on many measures may overwhelm any discrete effect linked to service lines. We have attempted to control for facility differences in terms of characteristics such as size and patient population, but have not directly assessed other strategies such as integrations or creation of regional sub-systems within VISNs. We also have been unable to assess the joint effects of VISN-level and facility-level service lines. Also, the initial disruption of these multiple change processes (including implementation of service lines) may offset any positive effects attributable to service lines.

Third, categorization of a variety of organizational arrangements as "primary care service lines" may cloud important variations and limit significant findings. Primary care service lines are actually quite heterogeneous. Some include only out-patient primary care, some include all out-patient care, some encompass all medical care, and some primary care service lines are part of larger medical/surgical service lines that include all general medical and surgical care provided by a facility or network.

Fourth, the measures used in our analyses to assess potential service line benefits may not be sufficient. It may be important to develop additional measures related to VA performance goals, as well as to examine outcomes in clinical areas other than primary care and mental health. In addition, using the change in performance over the period of one year in a cross-sectional evaluation design may have resulted in a very conservative analysis of effects; it is necessary to include multiple years of outcome data to reliably detect any effects.

However, this study does provide the first large-scale empirical findings of the effects of service lines on achievement of organizational goals. It has revealed that different service line forms have different effects, as well as the negative effects of implementing the new structures. The study has also shown the different patterns of use of service lines at the VISN level and the initial perceptions that the task force structures are associated with the fewest advantages and the division structures with the most advantages. These results suggest that the task force structures at both the VISN and facility levels should not be utilized, and that managers must carefully weigh the negative impacts of change against potential gains to be achieved through service line restructuring. The findings also suggest that further study would be beneficial in developing and testing our understanding of these phenomena.

6. Agenda For Further Evaluation

To develop a fuller understanding of service lines in VA, their implementation, structural variations and their effects, it is necessary to continue to monitor both facility-level and VISN-level service line implementation and outcomes over time. At the VISN level, effects cannot be expected until after the service lines are well established. As discussed earlier, from our experience with the facility-level service lines, we conclude that this will require additional data collection, through FY03. This time period will allow the investigation of the effects of service lines in VISNs 1, 5, 10, and 13, which now in FY01 are just evolving into their intended forms, in addition to the established service lines in VISN 2. These additional analyses should include not only the outcomes measured at the facility level aggregated to the VISN level, but also additional VISN performance measures. Furthermore, analyses should include additional clinical areas in which service lines have been implemented, such as extended care and acute and specialty care.

Second, we need to develop a better understanding of the findings at the facility level. The mixed-evaluation service lines are remarkable in their negative relationships to outcomes. The small number of statistically significant positive associations involving longer-duration service lines is also remarkable. We must determine whether in fact there is not a relationship or whether measuring the change between FY96 and FY97 represented only a portion of the total change over time. Similarly, the lack of findings regarding control over budget was surprising and requires further investigation. Although some managers felt that service lines' control over budget was critical, quantitative analyses did not bear this out. We have observed several variations in the organization of primary care service lines, for example whether they are free standing or part of a larger service line. These variations also require further investigation.

Facilities are also continuing to implement service lines in primary care, mental health, extended care, and to a limited extent other more focused clinical areas such as diabetes and SCI. These data need to be examined in a longitudinal analysis that looks for both anticipated negative effects on outcomes that appear to follow initially after service line implementation and positive effects on outcomes that might appear one to three years after implementation.

We have continued to obtain information on facility-level service line implementation through a fax-back survey. We are currently validating those data. We propose to continue those data collection efforts to build the longitudinal database. We also have constructed a combined database that includes the last five years of customer satisfaction data and we propose to construct a similar database from archived data from Austin. Thus, in addition to the proposed prospective analyses, knowing that a number of service lines have been operating in the facilities for several years, we will first examine facility outcomes retrospectively over the last five years. In these analyses we will examine not only service line effects but also the effects of other factors such as facility integrations and their interactions with service lines.

Third, the analyses to date have not addressed how service lines may affect medical center staff nor obtained direct measures of their perceptions of medical center and VISN functioning. As part of another project we surveyed staff in all medical centers in 1997 regarding medical center culture, emphasis on Baldrige quality dimensions, and alignment of organizational rewards with quality goals. We have readministered these surveys in 1998 and 2000 and added measures of VISN integration, emphasis on professional values and staff satisfaction. We propose to examine the relationships between these measures and service line implementation. This will provide information on whether service lines are associated with perceived VISN integration, whether they have a negative effect on emphasis on professional values, and whether there is a relationship between service line implementation and staff satisfaction.

Finally, the site visits conducted in this study have provided descriptive information useful both for interpretation of the quantitative analyses and for informing managers throughout VA about the changes that are occurring and how different medical centers, service lines and VISNs are managing these changes. We propose to continue these efforts and to continue reporting our observations throughout VA through vehicles such as *Transition Watch*. Implementation of large-scale change, such as service lines, cannot be understood through observations at one point in time. Through continued site visits we will be able to observe and report on the dynamics of change.

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